

Forest Tax & Stewardship News

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Giants in the Woods

By Paul Pingrey

You might think you've fallen into a Terminator science fiction movie if you've ever seen mechanized timber harvesters working in the woods. These giant machines can reach out with a cutter boom, grab a tree up to 22-24 inches in diameter, clip it off at the base and lift the whole tree. Before laying the tree down, harvesters knife off the limbs and precisely cut each log to length with uncanny accuracy. Hydraulics and computers guided by a lone operator do all the work.

In cut-to-length (CTL) systems, enormous wheeled or tracked wagons called forwarders trundle through the woods to retrieve the cut logs. The forwarder operator uses a "knuckleboom" grapple to load the wagon bunks, capable of hauling 29,000 to 39,000 lb. loads (5 to 8 cords) in one pass. Both the harvester and forwarder operators do their work from within cabs with futuristic controls that would make the flight engineer

of a jetliner proud. Cheap they are not, with a new cut-to-length processor and forwarder pair running about \$1 million.

Tree-length logging is a mechanized alternative to CTL systems. A fixed head feller-buncher is driven up to each tree to cut it off and lay it down on a pile. A grapple skidder then seizes the base end of the pile and drags the trees (tops and all) to a landing. A feller-buncher and grapple skidder will cost about \$625,000, but the tree-length technique requires additional equipment at the landing to delimb trees and cut logs to length. Those machines could add another \$600,000 in cost (Pulkki, 2001).

In spite of the capital expense, mechanized systems are making a logger with a chainsaw an uncommon image in Wisconsin. According to a University of Wisconsin study, only about a third (36%) of timber producers in the state relies on chainsaw-based operations. The rest (64%) are fully mechanized (Rickenbach, et al 2005). Of those operators who are mechanized, 61% are

continued on page 2



In This Issue

DNR Forestry Offers Publications — Pg. 3

Why Hire a Forester to Help With Timber Harvests? — Pg. 4

Invasive Plants in Wisconsin — Pg. 6

Fire Season is Here — Pg. 7

Legislative Update — Pg. 7

Internet Resources—Timber Sales and Income Taxes — Pg. 8

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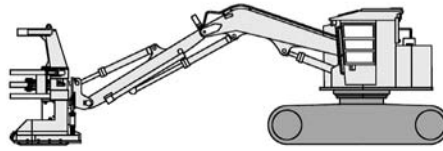
using the most advanced cut-to-length system. Twenty-three percent of the mechanized operators use the tree-length system and the 14% remainder use a combination of CTL and tree-length or other equipment.

The first time you see mechanized behemoths in the forest, you cannot help but wonder what effect they have on the ground or how they can possibly maneuver without destroying everything in their wake. It may seem counterintuitive, but these “giants in the woods” are gaining respect for low-impact, environmentally friendly logging. Mechanized harvesters (especially CTL) are surprising nimble even in thinning operations and on sloped terrain. In the hands of well-trained operators, mechanized processors will cause less site disturbance than traditional chainsaw and skidder methods. They’ll get the work done faster, with fewer people and only a third of the injury rate for conventional harvesting.

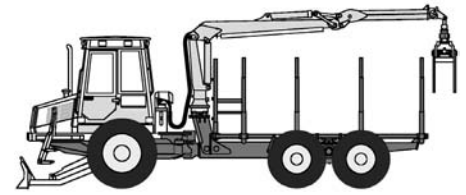
There are many advantages to using the modern equipment. For starters, a cut-to-length processor boom can reach out 30-35 feet. As a result, the machine doesn’t need to move frequently, impacting a much smaller footprint and needing fewer roads. Limbs are dropped near the stump and so are evenly distributed over the site, making an excellent cushion for the harvester and forwarder machines to roll over. Large tires or tracks minimize soil pressure and compaction, in some cases less than five or six pounds per square inch when duals or high-flotation tires are used. The CTL and tree-length machines consistently cut stumps lower to the ground. Since all CTL processing is done in the woods, much less space is required for log landings. That is an advantage over the feller-buncher or conventional techniques where tree-length pieces must be cut up at the landing, which demands space to spread out and sort logs.

From the operators’ perspective, loggers are much safer in shielded cabs than when they worked in the open with chain saws. Hard hats aren’t nearly as effective in stopping a falling limb as

Cut-To-Length Harvesting System



CTL processor with articulated boom cuts and trims logs. The long boom minimizes machine travel.

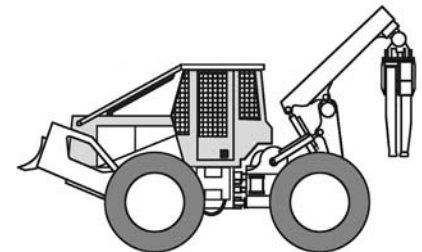


Forwarder rolls logs out to the landing. A processor and forwarder are the only equipment needed for CTL logging.

Tree-Length Harvesting System



Feller-buncher cuts trees and lays them down. The machine must be driven up to each tree.



Grapple skidder drags cut trees to a landing where other specialized machines delimb and cut (slash) logs.

The above images in this table depict John Deere Timberjack® equipment.

a steel cab! The lower injury rate is reflected in decreased insurance costs. On the con side, however, long shifts in mechanized harvesters can be stressful, requiring operators to be constantly alert monitoring controls in the cab and what’s happening in the forest outside. Experts say it can take up to two years of training and experience to become fully proficient in operating the complicated equipment.

Mechanized harvesting does require fewer workers. Two mechanized operators are equivalent to a conventional operation of four to seven workers with two skidders, loader, and a dozer (Mead-Westvaco, 2005). The increased output per person is essential in our society where it is becoming increasingly difficult to find laborers willing to work in logging. Of Wisconsin timber producers with employees, 88% report problems finding reliable workers

(Rickenbach, et al 2005). Almost two-thirds of logging firms are family or partnership-owned and have no other employees. In many parts of Wisconsin, labor shortages would make timber harvesting impossible to accomplish without mechanized technology.

For landowners, mechanized logging is producing economic as well as environmental benefits. Efficient mechanized logging systems make it possible to thin stands of trees that were not profitable to work a decade ago. Improvement cuts in northern hardwood pole stands can now generate income where once the landowners would have had to pay someone to cut and leave small trees lay. Conifer release from poor quality hardwoods has become economical. Mechanized harvesters are being used to cut weed trees like boxelder and locust in southern Wisconsin that were once impossible to sell. The accessibility

of small hardwoods through mechanized harvesting has led to adoption of new pulping methods to utilize this abundant raw material. Expanding markets and timber producers' drive to find wood to feed hungry processors (and pay loans) have also benefited landowners with higher timber stumpage prices.

As with any timber harvesting equipment, operator attitude is the most important factor. Even someone logging with horses can skin up trees and cause ruts, and the same applies to mechanized harvesters if the operators are careless. Landowners are encouraged to seek out professional loggers with Sustainable Forest Initiative training or Wisconsin Certified Master Loggers who take pride in the services they provide.

Further Reading (Google on the article title):

- MeadWestvaco Forestry Division. "The Changing Face of Logging" in Forest Focus — Winter 2005.
- Ponsse, Inc. "Cut-To-Length Logging Method" 2005 <<http://www.ponsse.com/images/Flash/CTL/index.html>>
- Pulkki, Reino. "Cut-to-Length, Tree-Length or Full Tree Harvesting?" Lakehead University 2001. <http://flash.lakeheadu.ca/~repulkki/ctl_ft.html>
- Rickenbach, Mark; Steele, Thomas; Schira, Mike. "Status of the Logging Sector in Wisconsin and Michigan's Upper Peninsula" University of Wisconsin Extension 2005



A Timberjack forwarder loaded with low-quality oaks thinned from a conifer release project on the Black River State Forest. [Photo by Paul Pingrey]

DNR Forestry Offers Publications

The Wisconsin DNR – Division of Forestry offers a number of publications of interest to forest landowners, and many of these are available online. Here's a sample of the many publications you can read and download from this page: <http://dnr.wi.gov/org/land/forestry/Publications/>

- Forest Management Guidelines
- Threatened and Endangered Species in Wisconsin Forests
- Wisconsin Forests at the Millennium
- Wildfire: Are You and Your Home Prepared?
- Forest Management Strategies to Minimize Impact of the Gypsy Moth
- Oak Wilt Management: What are the Options?
- Ten Ways to Protect Your Woodland Property
- Landowner's Guide to Managing Shorelands
- A Farmer's Guide to Woodland Management
- Conducting a Successful Timber Sale: A Primer for Landowners

And many more...

Additionally, you can find links to several books on this page, including *Every Root an Anchor: Wisconsin's Famous and Historic Trees* and *In Grandpa's Woods*. We also provide links on this page to UW-Extension and USDA Forest Service publications.

Also, past issues of Division of Forestry newsletters (including the one you're reading now) are consolidated on this page: <http://dnr.wi.gov/org/land/forestry/Publications/Newsletters/>



Why Hire a Forester to Help With Timber Harvests?

By Paul Pingrey

Unless you purchased land that was already enrolled in the Managed Forest Law (MFL) or Forest Crop Law, you probably worked with either a DNR forester or a private Cooperating Forester on the development of a forest management plan. Plans generally recommend or require timber harvests sometime during the life of an MFL agreement. Considering that a forester was involved in preparation of the plan, is it necessary to work with a forester to implement a prescribed harvest?

The technical answer is no, but retaining a forester might help the harvest go smoothly and result in more income for you. It depends upon the complexity of the job, the time you have to devote to the task and your experience working with timber producers.

Although Forest Stewardship plans provide information about the anticipated need for timber harvests (usually the “why,” “when,” basic harvest system and general parameters), the plans are not meant to go into detail about how to carry out a timber sale. That would entail a harvest plan that goes into specifics about trees to remove or keep, water quality precautions and permits, equipment considerations, location of roads and loading areas, legal notices to file, contract specifications, etc. For many timber types, timber producers or foresters working for logging companies might be able to attend to such details satisfactorily. If, on the other hand you

- want to get competitive bids for timber,
- have complex marking needs to assure good growth or regeneration of remaining trees,
- need help to verify your sale boundaries,
- want an independent scale (measurement) of timber cut and removed,



Wisconsin Family Forests Executive Director Gerry Mich examines a delimbing blade on a Ponsse Cut-to-Length harvester. And yes, he put his hard hat back on! [Photo by Paul Pingrey]

- have little time to watch over the harvest or no idea if work is being done properly,
 - need help with a contract to protect your interests;
- ...then you should hire a forester to help with your timber sale or work through some other entity such as a

forestry cooperative that will secure the services of a professional forester.

The Division of Forestry's policy is to refer all landowners seeking timber harvest assistance to Cooperating Foresters. DNR foresters will assist only if no Cooperating Forester is interested. In 2003-2005, an annual average of

88,500 acres of private woodland harvests was established by Wisconsin DNR and Cooperating Foresters. Private Cooperating Foresters set up an average 87% of the harvest acreage, while DNR foresters handled the remaining 13%.

A Wisconsin Cooperating Forester is a uniquely qualified professional with at least a bachelor's degree in forestry. As described by the Society of American Foresters, "A forester learns the art and practice of forestry through comprehensive scientific and technical coursework and practical field experience." A Cooperating Forester has also signed an agreement with DNR to follow sound forestry as defined in the *Wisconsin Forest Management Guidelines* in all the forest management and timber harvest assistance that they provide.

Although the DNR Cooperating Forester Agreement establishes training prerequisites and silvicultural guidelines, it does not guarantee performance of private foresters.

Before you choose a private forester, you should:

- Talk to a few foresters and ask them about their strengths. Decide if you are comfortable with their personality, ability and professional etiquette.
- Ask what they will do and how much it will cost for their help. A written contract for services is recommended.
- Ask about their experience.
- Check if they have professional liability insurance.
- Ask if they also buy timber, which could represent a conflict of interest.
- Request several references and contact them before making a final decision.

Paying Foresters for Timber Sale Assistance

Regarding methods to pay private foresters for timber harvest assistance, New York Extension forester Peter J. Smallidge offers the following advice:

"Some, but not all, industrial foresters won't charge you directly for services because they may expect the timber to be sold to their mill, and under some circumstances this is a desirable working relationship. Many mills have been established for decades and seek long-term sustainable relationships with forest owners. Some mills have well-qualified and credentialed foresters who can provide a variety of services. [These are identified as "Industrial Foresters" in the Wisconsin DNR Cooperating Forester program.]

Among consultants the most common payment method is as a percentage of sale or "on commission." Payment on commission means some percentage of the timber sale value goes to the forester; the more high-value timber that is cut the more money the forester makes. If you decide to hire a forester using commission, know that you can negotiate the rate of commission and that you need not be bound by the "usual" rate. Most consultant foresters will be able to describe what they see as advantages to payment on commission.

An increasingly common payment method and one that has several advantages for landowners is to pay on a flat rate, such as per hour or per acre, rather than pay a commission for timber sale assistance. The advantages of flat rate include the following:

1. Avoiding the potential for a conflict of interest. The potential exists because the forester makes more money if they administer a sale where they designate a greater number of high value trees and a lesser number of low value trees for harvest. Foresters won't inherently favor high-value trees, but a flat rate avoids the perception for a conflict of interest.
2. With flat rate, a forester receives fair compensation at a known rate for any and all services. A forester deserves fair compensation because they can provide important and valuable technical assistance. Because timber sales involve similar skills (e.g., inventory, planning, tree selection) regardless of the quality of the timber, a flat rate ensures fair com-

pensation for the forester and a stable price for the landowner. Note that the sale of low value timber to improve the forest may require more time for marking and marketing and thus perhaps higher costs than high value sales.

3. A flat rate allows a forester to provide services to a landowner without a timber sale or with a sale involving low value trees. Some foresters won't work with landowners who want to cut cull trees or other low value trees. Payment on commission of sale isn't possible if the only desired service is to update a management plan, mark boundaries, designate trails, girdle habitat trees, or plant open land.

Good forestry, or bad forestry, can happen with any type of forester or payment method. The landowner needs to emphasize their desire for the use of sustainable practices that meet the goals for the property. Through a combination of the process to find a forester, a contract with a forester, and clear communication of your goals, find a strategy that ensures the sustainability of your forest resource."

The print edition of the Wisconsin 2006 Directory of Foresters (Publication FR021-2006) can be requested by sending an e-mail to Forestry.Webmail@dnr.state.wi.us. An online listing of DNR and Cooperating Foresters is available at: <http://dnr.wi.gov/org/land/forestry/Private/Assist/>



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The publication is available in alternative format (large print, Braille, audio tape.etc.) upon request. Please call 608-267-7494 for more information.

Invasive Plants in Wisconsin

By Gary Steffen

The Invasive Plant Program Feasibility Study was commissioned in 2005 by the Wisconsin DNR Forestry program. The study was needed because non-native invasive plants are impacting forest regeneration and productivity, and the issue has become a concern in the forestry community. Impetus for the study also came from the Wisconsin Council on Forestry and the Wisconsin Council on Invasive Species. It is difficult to get accurate distribution information for invasive species, as weedy, non-native plants are less often reported than native species. Many invasive plants have no official record in many counties of the state, yet based on observation and reports from foresters, it is clear that they are widespread.

There is some scientific literature on the effects of invasive plants in forests, but in general, statistical data is lacking. There has been little money available to researchers to study the specific effects of these species on forests. Most of the studies attempt to illustrate how invasive plants affect forest regeneration, species richness, biodiversity, ecosystem processes, and nest predation. It appears that direct competition for resources is the main mechanism by which invasive plants impact native trees and other desirable species. Allelopathy, the chemical restriction of one plant species by another, is also implicated as a factor in the success of several invasive species. Generally such invasions threaten biological diversity by producing population declines of native species, as well as altering key ecosystem processes like hydrology, nitrogen fixation, and the natural fire regime.

Woody shrub species may be the most widespread and problematic invasive plants currently affecting our forests. Two buckthorn species and four bush honeysuckle species already cover large acreages of forest understory. Autumn olive and multiflora rose are common in areas where agriculture has been practiced, and Japanese barberry is gaining a hold in the southeast and south cen-



Garlic mustard in the second year of its life cycle. Note the numerous seed pods on the top one-third of the plant.

tral parts of the state. Black locust is a tree species that is widely distributed and spreading in the state. It is a native of the Appalachians that was planted here for erosion control.

Several non-woody shrubs are also of concern. For example, Japanese knotweed is becoming more common in riparian areas and moist uplands. Reed canary grass is widespread in forested wetlands and can also occupy moist upland sites. Few herbaceous species can compete in the shade of a forest understory, but garlic mustard is a notable exception and is spreading across the state faster than any plant that has been observed to date. Dame's rocket has a similar growth habit, but does not appear to be as competitive. Leafy spurge and spotted knapweed are other herbaceous species of concern, mainly invading barrens and semi-open forests.

Oriental bittersweet, a vine, is widespread and becoming locally abundant at scattered locations around the state.

As noted, one of the species of greatest concern in forests today is garlic mustard. Garlic mustard is a biennial herb in the mustard family whose new leaves produce a distinct garlic odor when crushed. The plant has no known natural enemies in North America, and is difficult to eradicate once established. It displaces other plant species and may produce chemicals that negatively affect trees and other native plants. Garlic mustard's effect on oak forests may be of particular concern, especially considering the vast size and high quality of the resource in Wisconsin. Research has indicated that even at low densities, chestnut oak seedlings were negatively affected by competition with garlic mustard. Therefore, it is likely that oak seedlings could be seriously affected by the presence of garlic mustard in forested habitats.

Definitive information on the economic impacts of invasive plants on forests is even more difficult to find, as the issue has not been studied to any great extent by economists. Models for predicting economic impacts of the damage done by invasive species are lacking, particularly when projecting effects at broader scales and over longer time periods. One estimate for the entire U.S. is that the harm done by all invasive species, including pests, causes damages of \$138 billion each year. In contrast to estimating the cost of damages, it is easier to calculate the costs of controlling invasive plants, which are known to be expensive. It is estimated that if Wisconsin had attempted eradication of common buckthorn infestations across all types of ownerships in 1996, first-year treatments alone would have cost \$2.85 million. This, however, would only cover one-time treatments; the long-term costs of control, as well as the loss of productivity of affected forests, would drive up cost estimates significantly. Treatment of invasive shrubs on woodlots can range from \$500 to \$2,000 per acre.

Many additional invasive plants are expected to be a problem in the future. Some of these are already in Wisconsin, but have not yet become widespread and abundant. Others are not present at this time but are almost certain to arrive eventually; these are species already established in nearby states, or in the northeast U.S. where climate and soils are similar. New vines are a particular concern; some of these species are extremely difficult to control and can cause heavy damage to established forests. Invasive tree species, such as Siberian elm and tree-of-heaven, are already present and are likely to be very competitive. Additional shrubs and herbaceous species will compete with tree seedlings and native plants, and, presumably, with invasives already present.

Considerable activity during the past two years has focused on tasks identified in the Invasive Species Statute (see s. 23.22 Wis. Stats. at <http://www.legis.state.wi.us/rsb/stats.html>). The Wisconsin DNR provides staff support to the Wisconsin Council on Invasive Species, currently developing a regulatory classification system and criteria for placing species in categories. This work will culminate in a rulemaking process, and will eventually assist in halting additional sale and distribution of harmful species.

The specific level of effort for controlling invasive plants has not been determined. As more information is gathered the effort required will become clearer. Information on species which are considered invasive can be found on the internet at: <http://www.wi.gov/invasives/plants.htm>.



Fire Season is Here

By Nancy Bozek

In Wisconsin, fire danger tends to be the greatest in early spring after the snow has melted but the grasses, shrubs, and trees have not yet greened up. The WI DNR posts fire danger conditions on Smokey Bear signs throughout the state, ranging from low (fires can start but will spread slowly) to extreme (fires start easily and spread rapidly). Free burning permits are required by the DNR in many parts of the state to conduct any outdoor burning. Persons wishing to burn should contact their local DNR office, emergency fire warden or local officials before burning to find out if a burning permit is required. Permits are issued based on current fire danger conditions, which can change throughout the day. Landowners with a burning permit should re-check with their permitting office on the afternoon prior to their evening burn to make sure their permit is still valid for that day.

On May 5, 2005 fire danger conditions moved from high to very high due to low humidity, high winds and dry woodlands. That afternoon near Big Flats in Adams County, a landowner decided to burn grass around a campfire ring to prevent future fires. He had a valid burn permit for after 6 pm that day but unfortunately decided to start his fire

about 1 pm. The fire quickly spread out of control, becoming Wisconsin's largest wildfire in 25 years covering 3410 acres and burning 30 homes, many out buildings and acres of forest. More information on fire danger conditions, permits and the Cottonville fire can be found at <http://www.dnr.wi.gov/org/land/forestry/fire/>

Managed Forest Law participants and members of the Wisconsin Woodland Owners Association (WWOA) lost homes, vehicles, and forests to the Cottonville fire. WWOA is assisting members to replant trees in the fire area. Volunteers are needed from April 13 through May 17 to hand plant trees. WWOA is also accepting donations of bottled water, food and other items to assist in the replanting effort. If you are willing to volunteer a half day, full day or weekend to assist in Adams County, your help would be greatly appreciated. Please contact the WWOA office with your phone or email and dates that you are willing to volunteer. Volunteers will need to dress for the weather, bring their own gloves, shovel or planting bar and water bottle. To receive a registration brochure for the tree planter's workshop or to volunteer or donate for the replanting effort, please contact the WWOA office at 715-346-4798 or nbozek@uwsp.edu



Legislative Update

Two bills affecting the Managed Forest Law (MFL) are currently being considered in the legislator's spring session. Assembly Bill 7 is proposing a change to the law so that a landowner with 10 contiguous acres may apply for entry of land that is in more than one municipality. Current law requires that a landowner have at least

10 acres of forest land (80% productive) in a single municipality to be eligible for entry. AB7 would allow a landowner with 10 total contiguous acres in two or more municipalities to apply for entry.

The second bill is AB 1011 which proposes to change the method of valuing timber. This involves the 5% yield tax charged when timber is cut from MFL land. Under current law, the DNR determines the stumpage rates for the yield taxes on timber sales. These rates are listed by zones (13) in the state and by species harvested and product types

(logs or cords). The landowner reports the volumes harvested and the DNR issues an invoice for the yield tax based on those volumes and stumpage rates. The proposed bill would allow a landowner to choose either the stumpage rates or the amount that he/she actually receives to calculate the 5% yield tax. It is not clear whether either of these bills will become law.

You can find more information on these bills and other legislation on the internet at www.legis.state.wi.us.





Internet Resources—Timber Sales and Income Taxes

By Gary Steffen

The Forest Tax Section of the Department of Natural Resources is not able to give advice on the preparation of state or federal income taxes. Because the Forest Tax Section administers the Forest Crop Law and the Managed Forest Law, we occasionally

receive questions from landowners on how to report taxes for revenue received from timber sales. Unfortunately for the landowners that ask this question, we are not trained in state or federal income and capital gains tax preparation. We have no expertise in this area, but we can direct you to a couple of sites on the internet that can provide a general explanation for how to report this revenue.

One of the sites that we can recommend is a USDA Forest Service site that provides links to several timber taxation publications, including an article titled, “Tax Tips for Forest Landowners for the 2005 Tax Year.” This article gives a general overview of taxes and timber sale revenues, cost sharing, Conservation Reserve payments, casualty losses, and

management and maintenance expenses. You can find a link to this article at the following internet address: <http://www.fs.fed.us/r8/spf/coop/taxation/>.

Another source of information is the Wisconsin Woodland Owners website at <http://www.wisconsinwoodlands.org/>. If you click on the “resources” item, there are several publications and links to select from. Specifically, there is a section titled, “landowner tax assistance,” that provides links to the National Timber Tax website and other helpful sources of information.

Although the Forest Tax Section is not able to give advice on the preparation of income taxes, the websites listed above can provide valuable information on reporting the revenue received from timber sales.



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